

Rating Methodology - Asset / Mortgage Backed Securitizations

Introduction

This report summarizes the methodology followed by CARE Ratings (CARE) to assign rating or credit opinion to the Pass through Certificates (PTCs) or Assignee Payouts and Credit Enhancement in asset backed securitization (ABS) or mortgage backed securitization (MBS) transactions.

The risk analysis of ABS / MBS transactions can be broadly summarized as follows:

1) Analyzing the underlying asset pool

The Securitization process de-links the underlying pool of assets from the risk of lender, who originated the assets. The analysis of underlying asset pool involves evaluating the originator's sourcing process, credit appraisal system / underwriting standards and collection and monitoring mechanism and studying the originator's historical performance for that asset. Based on the historical data analysis, actual pool characteristics, prevalent and expected economic environment the cash inflows from underlying asset pool is estimated in base case and stress case scenarios.

2) The transaction structure

The transaction structure is analyzed to assess its impact on the cash flows. CARE also takes into account the effect of market variables, the counterparty's experience and credit worthiness, legal soundness of the transaction.

3) Assigning the rating / credit opinion

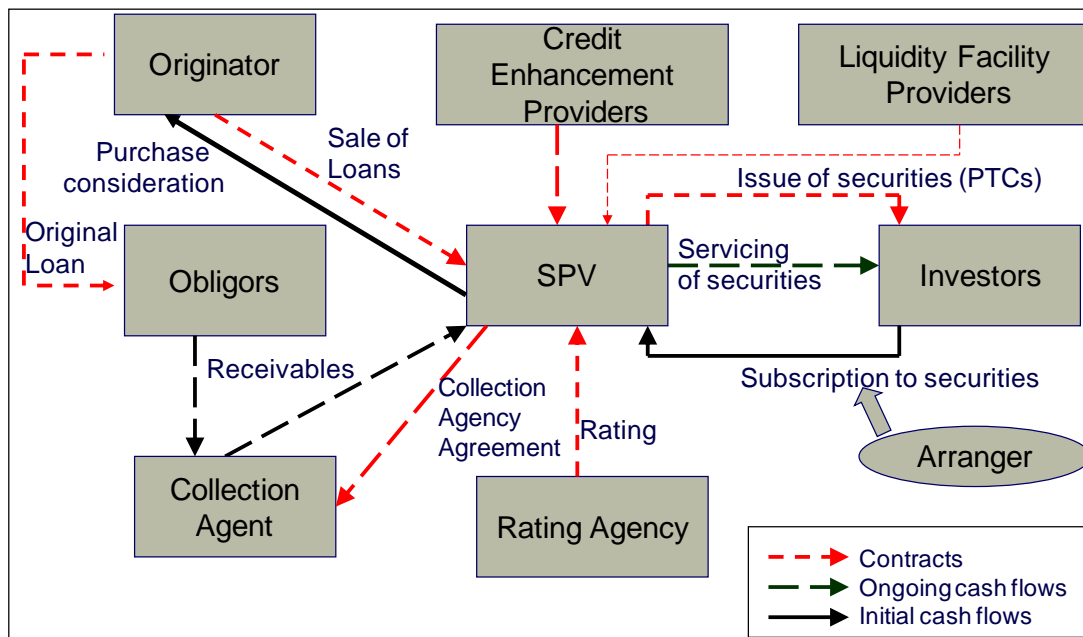
The cash inflows from underlying asset pool are compared with cash outflows to investor(s) in both base case and stress case scenarios to assess the sufficiency of given credit enhancement.

Securitization

Securitisatation is the process in which the underlying pool of assets are structured or packaged and sold as financial instruments to investor(s) either directly or through a Special Purpose Vehicle (SPV). Typically in India, the originators or sellers are Banks, NBFC, HFC & others. The underlying assets are mainly secured loans like housing loans, auto loans, commercial vehicle loans, construction equipment loans, two wheeler loans, tractor loans, three wheeler loans and unsecured loans like personal loans, consumer durable loans. The SPV is formed in the form of trust, settled and managed by a trustee. The trust purchases the pool for a consideration either at par or premium. The investors subscribes to the Pass through Certificates (PTCs) issued by the trust. These PTCs are backed by the underlying loan receivables and the beneficial interest lies with investors. The Servicer (typically, Originator in India) is appointed by the trust to service the loans. Servicer passes on the periodic collections from the underlying borrowers to the trust which is further passed on to the investors as per scheduled payouts. Credit Enhancement is provided to an SPV to cover the losses associated with the pool of assets. Credit Enhancement may be divided into First Loss facility and Second Loss facility. First loss facility represents the first level of financial support to a SPV as part of the process in bringing the securities issued by the SPV to investment grade. The provider of the facility bears the bulk (or all) of the risks associated with the assets held by the SPV. Second loss facility represents a credit enhancement providing a second (or subsequent) tier of protection to an SPV against potential losses. Liquidity Facility is provided to assure investors of timely payments. These include smoothening of timing differences between payment of interest and principal on pool of assets and payments due to investors.

In India, the Direct Assignment structure is also prevalent in which there is no intermediate trust and the transaction is on a bilateral basis between seller and buyer.

Figure 1: Typical securitization structure

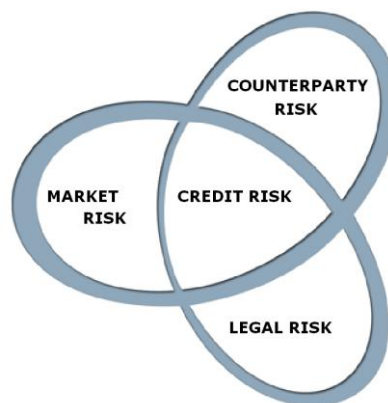


Key features of Securitisation:

- 1) All the risks and rewards associated with underlying pool are transferred to the buyer;
- 2) The transaction structure should be such that the bankruptcy of seller does not affect the underlying pool;
- 3) There is no recourse to seller once the underlying pool is sold.

Key Risks in Securitisation

Figure 1: Key Risks in Securitisation



The Key risks in a securitization transaction can be summarized as follows:

1) Credit Risk

It is the risk of non-payment by the underlying obligors, which is dependent on underlying obligor's ability and willingness to pay. The underlying obligor's ability to pay is primarily driven by adequacy and stability of income. Loan to value (LTV) ratio and income generating capability of the underlying asset will indicate the obligor's willingness to pay. CARE analyzes the originator's sourcing and credit appraisal system, historical portfolio performance (both static and dynamic performance data) and actual pool to assess the credit and liquidity risk.

2) Market Risk

- a. **Macro-economic Risk** - The macro-economic scenario affects underlying asset valuation, income generating capacity of the asset (if case of certain asset class), borrower's income, market interest rates, etc. The expected economic scenario has an impact on future behavior of the pool. The regulatory scenario is also a critical aspect to consider for different asset classes, for e.g. change in regulations for repossession process.
- b. **Asset Risk** - The general risk perception of the asset, introduction of new models/substitutes or new technology will directly impact the performance of pool. CARE considers the historical performance of asset-class and the factors expected to impact the future performance of asset-class to assess this risk.
- c. **Prepayment Risk** – The prevailing and expected market interest rates and expected income levels will influence the prepayment rates. CARE assesses the historical prepayment rates observed for that asset-class for originator as well as similar issuances. Based on the historical data and expected interest rates and income levels, CARE makes appropriate assumptions.
- d. **Interest rate Risk** – The interest rate type mismatch may arise in case where the collections from underlying borrowers are based on fixed interest rate and the payouts to investors are based on floating rate and vice versa. The interest rate benchmark mismatch may arise when the both collections and payouts are based on floating rate but reference benchmarks are different. CARE assesses the interest rate risk assuming different interest rate scenarios and its consequent impact on collections from underlying borrowers. This risk is more prominent in MBS transactions.

3) Counterparty Risk

- (i) **Servicer Risk** – The ability of the Servicer to service the pool over the tenure of the transaction is an important risk factor. Typically, the originator acts as a Servicer in Indian securitization transactions. CARE takes into account the Servicer's experience, length of the transaction and Servicer's credit quality to assess the Servicer risk. The provision to appoint back-up Servicer is also considered for additional comfort.
- (ii) **Commingling Risk** – The time lag between the collections from the underlying obligors and deposit into collection account give rise to commingling risk. To address the commingling risk, CARE considers the short term credit quality of the Servicer.
- (iii) **Other Counterparty Risk** – The presence of other counterparties like collection account bank, credit collateral provider etc. give rise to performance risk. CARE assesses the credit quality of such counterparties to address this risk.

4) Legal Risk

The securitization transaction involves transfer of receivables which must be a 'true sale' as per law. This effectively means that the originator does not retain any control over the receivables. It should not contradict any of the terms of the underlying loan agreements. The trust / assignee should have unrestricted access to the receivables as well as credit enhancement, subject to terms of its utilization. CARE relies on an independent legal opinion confirming the above to address this risk.

In addition to above, CARE places utmost importance on the accuracy and integrity of the data provided by the Originator. CARE requires an audit report certifying the accuracy of the pool information from an external Auditor.

Risk Analysis in an ABS transaction

A) Analyzing the underlying asset pool

a) Originator / Servicer Analysis

Originator analysis is a key input to assess the quality of the pool. The quality of the pool is a direct reflection of the sourcing, underwriting norms and credit appraisal system of the Originator. As Originator also acts as Servicer in India, the collection and monitoring methods

used by Originator becomes equally important. The Originator analysis involves evaluating the management quality and experience, changes in the management in recent years, business growth, strategies and policies, major policy changes, financial strength, etc. CARE studies Originator's sourcing channel, underwriting norms, credit appraisal system, monitoring methods, collection mechanism and changes in the any of them over a period of time.

b) Portfolio Analysis (Dynamic)

CARE analyzes the performance of Originator in terms of collection efficiency, portfolio ageing (bucket movement), prepayments, etc. This quantitative analysis supplements the qualitative analysis of Originator, as mentioned above.

Collection Efficiency

The collection efficiencies are calculated to analyze the effectiveness of collection mechanism employed by the Originator. The collection efficiency can be further divided into two components – collection efficiency from current billings and collection efficiency from overdues.

Portfolio Ageing (bucket movement)

The portfolio Days Past Due (DPD) – asset class wise is an important performance indicator. The principal outstanding as on a particular date is classified into various buckets based on payment status of loans in the portfolio. Buckets formed are Current, 1 to 30 DPD, 31 to 60 DPD, 61 to 90 DPD and so on & so forth. CARE studies the bucket movement as on different dates over a period of time. For e.g. - as on quarter ends for last two years. CARE also analyzes the delinquency numbers, like 90 DPD & above, 180 DPD & above, over a period of time. The lagged delinquency levels may be also calculated to account for possible understatement of delinquency levels in a growing portfolio scenario. The lagged delinquency refers to outstanding amount on the delinquent contracts are expressed as percentage of total portfolio outstanding at an earlier point of time. For e.g. lagged 180+ DPD as on March '09 is calculated as total principal outstanding for 180+ DPD contracts as on March '09 as a percentage of total portfolio outstanding as on September '08.

Prepayments

The monthly prepayments observed over a period of time for the originator are taken into consideration while assuming the prepayment rates for the pool.

The portfolio analysis indicates the trend in delinquency levels over the period. It also helps to understand the effect of any change in underwriting norms and / or collection mechanism by Originator. The peer comparison of delinquency levels indicates the relative performance of the Originator for that asset class. It should be noted that Portfolio analysis is dynamic in nature in the sense that new disbursed loans gets added in the portfolio whereas the pool to be securitized is static in nature as no new loans can be added in the pool. Therefore the delinquency levels as observed in the Portfolio analysis is not the best estimate of the expected delinquency levels for pool to be securitized. The Static pool analysis overcomes this limitation of Portfolio analysis.

c) Static Pool Analysis

A static pool refers to fixed set of loans in which no new loans are added. Typically, the static pools are formed based on period of origination and there performance is measured periodically, preferably month on month, over the tenure. The performance measures are overdue curves (less than 90 days overdue curve - for liquidity shortfalls and greater than 90 days overdue curve - for credit shortfalls), DPD curves, prepayment curve, recovery rate, etc. As past securitized pools are akin to static pools, they are also analyzed in terms of collection efficiency, overdue curves, DPD curves, prepayment curve, recovery, etc.

Based on above analysis, CARE observes the average values, volatility and trend in the overdue curves, DPD curves, recovery rates and prepayments. CARE also analyses the static pool performance based on various parameters like borrower profile, asset type, loan to value ratio (LTV), geography, etc. Such analysis helps in identifying key risk parameters for that asset class.

d) Collateral Analysis (Actual Pool)

The collateral analysis or the actual pool analysis involves the following factors:

Pool selection criteria

The pool selection criteria play an important role in estimating the expected future performance of the pool. The pool selection criteria typically involve conditions on certain characteristics like minimum seasoning, upper limit on LTV, tenor, month's overdue, geographical concentration and obligor concentration, etc.

Pool characteristics

Pool characteristics are key input to determine the pool quality and future performance. Key pool characteristics are as follows:

Key pool Characteristics	Remarks
Asset type	Proportion of used / refinanced asset. Generally, used / refinanced asset have shown comparatively higher delinquency levels.
Asset Classification	Based on Asset manufacturer or model or class. Some manufacturer or models may have high resale value compared to others. Some class like Light Commercial Vehicles (LCV) in Commercial Vehicle (CV) asset class have shown comparatively higher delinquency levels than Medium or Heavy CV (MCV / HCV)
Borrower Profile	Certain borrower profiles like First Time Buyers (FTB) or First Time Users (FTU) in Commercial Vehicle (CV) / Construction Equipment (CE) loan segment and Self employed category in Auto loan segment have historically shown comparatively higher delinquency levels.
Geographical Distribution	Concentration in geography poses an additional risk.
Obligor Distribution	If few borrowers account for large proportion of the pool, it is an additional risk.
Seasoning	Typically, high seasoning is accompanied by higher build-up of equity, thereby lowering the credit risk.
Loan To Value Ratio (LTV)	Indicates the obligor's willingness to pay. Higher the LTV higher the credit risk.
Installment to Income ratio (IIR)	Indicates the obligor's ability to pay. Higher the IIR higher the credit risk.
Original Tenure	Typically, higher the tenor higher the credit risk.
Payment Status (Overdue composition)	Higher the composition of loans in overdue category higher the credit risk.

e) Portfolio Vs Actual pool comparison

CARE analyzes the characteristics of actual pool in comparison to originator's portfolio wide characteristics for that asset class. Such comparison will help in determining the quality of the actual pool vis-a-vis the originator's portfolio. The comparison is with respect to various characteristics like asset type, asset classification, borrower profile, geographical distribution,

obligor distribution, LTV, IIR, original tenure, etc. The proportion of the pool in each characteristic type is benchmarked against the delinquency levels observed for that characteristic in the originator's portfolio. An example for one such characteristic (Geography) follows:

Geography	Proportion of Portfolio as on 31st March, 20XX	Portfolio 90+ DPD as on 31st March, 20XX	Proportion of actual Pool
State 1	20.0%	1.8%	20.0%
State 2	15.0%	2.5%	25.0%
State 3	15.0%	1.5%	20.0%
State 4	20.0%	1.3%	10.0%
State 5	25.0%	1.3%	10.0%
Others	5.0%	3.0%	15.0%
Total	100.0%	1.7%	100.0%
Weighted Average 90+ DPD in Actual pool (assuming the Actual pool behave in the same way as Portfolio of the Originator)			2.0%
Extent of Negative Deviation			2.00% / 1.70% = 1.18

B) The transaction structure

CARE reviews the Term Sheet and other documents to understand the transaction structure.

a) Legal soundness of the transaction

For a securitization transaction, the legal soundness of the transaction structure is an important pre-requisite. The transaction should be in compliance the prevailing laws, guidelines and / or regulations. The transfer of pool assets (pool of loan receivables) to SPV / Assignee should satisfy the true sale criterion. The transaction structure should be such that it creates bankruptcy remoteness of pool assets from originator / seller. Also the credit enhancement / liquidity enhancement provided in the form of cash collateral should be bankruptcy remote of the provider. For the legal risk analysis of the transaction, CARE relies on a legal opinion from an independent legal counsel certifying the above.

b) Par or Premium

The structure of the transaction - whether par or premium, will impact the requirement of credit enhancement. In case of premium structure, the default or prepayment of higher interest rate loans in the pool will lead to premium loss. This may require utilization of credit enhancement. On the other hand, in case of par structure the default or prepayment of higher

interest rate loans in the pool will reduce the excess interest spread (EIS) if available in the form of credit enhancement. CARE applies stressed prepayment rates and EIS compression to account for this risk.

c) Waterfall Mechanism

The waterfall mechanism refers to the hierarchy of payments out of the receivables from underlying pool assets. The waterfall should be well defined and water-tight. CARE incorporates the waterfall mechanism in its cash flow analysis.

d) Counterparties in the transaction

The counterparties involved in the securitization transaction are Servicer, Trustee / Assignee Representative, Collection Account Bank and Credit Enhancement provider.

- ❖ **Servicer** – Typically, in Indian securitization market, Originator acts as a Servicer. The Originator Analysis also incorporates the Servicer analysis whereby CARE assesses the servicing experience and performance of the Servicer. CARE also takes into account the credit quality of the Servicer vis-à-vis the length of the transaction.
- ❖ **Trustee / Assignee Representative** – CARE takes into account the trustee / assignee representative's experience and capability to perform its duties and responsibilities.
- ❖ **Collection Account Bank** – The collection account bank should have the short term credit quality rating commensurate with the rating of PTC or Assignee Payouts. For e.g. If the rating or credit opinion of the PTCs or Assignee Payouts is CARE AAA (SO) or equivalent, the collection account bank should have highest short term credit quality rating.
- ❖ **Credit Enhancement / Liquidity Enhancement provider** – When the credit enhancement / liquidity enhancement is provided in the form of fixed deposit, the deposit holding bank should have short term credit quality rating commensurate with the rating of PTC or Assignee Payouts. For e.g. If the rating or credit opinion of the PTCs or Assignee Payouts is 'CARE AAA (SO)' or equivalent, the deposit holding bank should have highest short term credit quality rating. When the credit enhancement / liquidity enhancement is provided in the form of guarantee, the guarantee provider's rating should be commensurate with the rating of the PTCs / Assignee Payouts.

Eligibility for the credit and / or liquidity enhancement in the form of guarantee*:

The credit and / or liquidity enhancement can be in the form of corporate undertaking / bank guarantee. As per CARE's criteria, where the PTC / Assignee Payouts are rated 'CARE AAA(SO)' or equivalent, the guarantee can be provided by

- a) Any entity rated 'CARE AAA' or
- b) Any Scheduled Commercial Bank (SCB) which is rated CARE AAA(FD) on fixed deposit programme or 'CARE AA' or CARE AA+' on Lower Tier II Bonds. In such cases, the guarantee must be necessarily provided with the rating based trigger that whenever CARE's credit rating on the bank's Lower Tier II Bonds falls below 'CARE AA', the same must be replaced by another eligible guarantor or the credit-cum-liquidity enhancement must be substituted in the form of a Fixed Deposit within a period of 30 days.

Rationale for allowing trigger linked guarantees from SCB rated upto 'CARE AA' (on Lower Tier II Bonds):

- i. Guarantee is senior to Lower Tier II Bond.
- ii. SCBs rated 'CARE AA' or higher have not defaulted within a one year period.
- iii. Strong regulatory framework and support for SCBs in India.
- iv. The existence of trigger as stated above.

*Criteria on 'Eligibility for the credit and / or liquidity enhancement in the form of guarantee for securitization transactions' is also available on our website (web address - <http://www.careratings.com/Current/3/7545.pdf>) dated 14th May, 2010.

C) Assigning the rating(s) / credit opinion(s)**a) Base Case and Stress Case scenarios**

The actual pool to be securitized is static in nature. The base case assumptions for estimating the expected cash inflows from the actual pool should therefore be based primarily on the static pool analysis. However, it should be noted that the static pool analysis provides the historical performance of the originator for that asset-class. To some extent this limitation is mitigated by incorporating the recent trend observed in Portfolio analysis in the assumptions. Further these assumptions are adjusted to account for deviation of actual pool from static pool features and expected economic environment.

For stress case scenario, the assumptions in base case scenario are stressed according to the rating level and thereupon cash inflows from underlying asset pool are estimated. As the credit losses tend to follow log normal distribution, the stress factors are determined based on log normal distribution applied on historical data of the Originator.

b) Cash Inflow Vs Cash Outflow – Sufficiency of Credit Enhancement

The Cash inflows from underlying asset pool in the base case scenario and stress case scenario is compared with Cash outflows (as per payment waterfall mechanism) to assess the sufficiency of given credit enhancement.

Similar approach is followed to assess the adequacy of First loss facility, if Second loss facility is to be rated.

Summary

Risks	Analysis	Support / Mitigants
CREDIT RISK	Originator Analysis, Portfolio Analysis, Static Pool Analysis, Collateral Analysis, Portfolio Vs. Actual Pool comparison.	Credit Enhancement
LIQUIDITY RISK	Originator Analysis, Portfolio Analysis, Static Pool Analysis, Collateral Analysis, Portfolio Vs. Actual Pool comparison.	Liquidity Enhancement
MARKET RISK		
Macro-economic Risk	Economic Outlook, Market Variables.	Credit Enhancement
Asset Risk	Available asset class delinquency levels, Originator specific asset class delinquency levels, Economic Outlook, Industry Outlook, Market variables.	Credit Enhancement
Prepayment Risk	Portfolio Analysis, Static Pool Analysis, Available asset class prepayment rates, Market variables.	Credit Enhancement
Interest Rate Risk	Stressed Interest Rate scenario.	Credit Enhancement
COUNTERPARTY RISK		

Risks	Analysis	Support / Mitigants
Servicer Risk	Servicer Analysis, Credit Quality of Servicer, Transaction structure & tenure.	Credit Enhancement, Credit quality of the Servicer, Provision for Alternate Servicer.
Commingling Risk	Servicer Analysis, Credit Quality of Servicer, Transaction structure, Periodicity of deposit of collections from underlying borrowers.	Credit Enhancement, Credit quality of the Servicer.
Other Counterparty Risk	Credit Quality of Counterparties.	Credit quality of the counterparties, Provision for replacement of counterparties.
LEGAL RISK	Transaction Structure, Transaction Documents.	Legal Opinion

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